

Amendments to the Claims:

Claims 1, 10 and 11 are amended and claims 12 and 13 are added as set forth hereinafter.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A fuel cell system comprising:

a fuel preparation unit;

a fuel cell unit connected to said fuel preparation unit;

said fuel cell unit having a first operating parameter and

5 said fuel cell system having a second operating parameter which changes in a known manner as a function of time;

a measuring unit for measuring at least said first operating parameter; and,

an evaluation unit incorporating said measuring unit and

10 being configured to evaluate a time-dependent change of said first operating parameter in dependence upon the time-dependent change of said second operating parameter by the use of impedance spectroscopy.

2. (Original) The fuel cell system of claim 1, further comprising a generator for generating the known change of said second operating parameter as a function of time.

3. (Original) The fuel cell system of claim 1, wherein said second operating parameter is an electrochemical operating parameter of said fuel cell system; and, wherein said fuel cell system further comprises a generator for generating the known
5 change of said second operating parameter as a function of time.

4. (Original) The fuel cell system of claim 1, wherein said second operating parameter is a non-electrical operating parameter of said fuel cell system; and, wherein said fuel cell system further comprises a generator for generating the known
5 change of said second operating parameter as a function of time.

5. (Original) The fuel cell system of claim 1, wherein said evaluation unit is configured to compare a time-dependent change of said first operating parameter to a desired change of said first operating parameter.

6. (Original) The fuel cell system of claim 1, wherein a change of said second operating parameter causes a change of said first operating parameter; and, wherein said evaluation unit further comprises a filter device for separating said change of said
5 first operating parameter from changes of other operating parameters of said fuel cell system.

7. (Original) The fuel cell system of claim 1, wherein said evaluation unit includes at least one control unit for controlling said fuel cell unit.

8. (Original) The fuel cell system of claim 1, wherein said evaluation unit includes a control unit for controlling said fuel preparation unit.

9. (Original) The fuel cell system of claim 1, wherein said evaluation unit includes a recording device for recording the time-dependent trace of at least one of said operating parameters.

10. (Currently Amended) A motor vehicle comprising:

a fuel cell system incorporating a fuel preparation unit and a fuel cell unit connected to said fuel preparation unit;

5 said fuel cell unit having a first operating parameter and said fuel cell system having a second operating parameter which changes in a known manner as a function of time;

a measuring unit for measuring at least said first operating parameter; and,

10 an evaluation unit incorporating said measuring unit and being configured to evaluate a time-dependent change of said first operating parameter in dependence upon the time-dependent change of said second operating parameter by use of impedance spectroscopy.

11. (Currently Amended) A generator system for supplying a load, the system comprising:

a fuel preparation unit;

a fuel cell unit connected to said fuel preparation unit;

5 said fuel cell unit having a first operating parameter and

said fuel cell system having a second operating parameter which changes in a known manner as a function of time;

electrical connecting means for connecting said fuel cell unit to said load;

10 a measuring unit for measuring at least said first operating parameter; and,

 an evaluation unit incorporating said measuring unit and being configured to evaluate a time-dependent change of said first operating parameter in dependence upon the time-dependent
15 change of said second operating parameter by use of impedance spectroscopy.

12. (New) A fuel cell system comprising:

 a fuel preparation unit;

 a fuel cell unit connected to said fuel preparation unit;

 said fuel cell unit having a first operating parameter and
5 said fuel cell system having a second operating parameter;

 a measuring unit for measuring at least said first operating parameter;

 a generator for generating a known time-dependent change of said second operating parameter; and,

10 an evaluation unit incorporating said measuring unit and being configured to evaluate a time-dependent change of said first operating parameter in dependence upon said time-dependent change of said second operating parameter generated by said generator.

13. (New) The fuel cell system of claim 12, wherein said

evaluation unit is configured to perform the evaluation of said time-dependent change by use of impedance spectroscopy.